Stone Artifacts from Tonga and Fiji

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THE issue of *Asian Perspectives* for summer 1964 features an article describing an artifact found at Lower Mandailing, Sumatra (Tugby and Tugby 1964:166–170).

The following note describes two artifacts generally similar in appearance and possibly in function to the Sumatra specimen, both obtained by the writers in the course of archaeological excavation in Tonga and Fiji, respectively.

THE TONGAN SPECIMEN (Fig. 1, *top*)

This specimen was recovered at a depth of 28 inches from an extensive mound of midden material known as Mangaia. The mound was immediately south of the town of Nuku'alofa, Tongatabu (Suggs 1960:101–102; Golson 1961:172–174). Associated material included potsherds, the bones of birds and fish, and fragments of worked stone and shell. No date for the deposit has been obtained.

The artifact, of feldspathic basalt, is roughly rectangular in shape, both in plan and section, though rounding-off of all corners and edges has resulted in a form approaching oval, especially as regards the plan view. It is 91 mm long, 68 mm wide and 32 mm thick.

It is difficult to be certain if some elements of the shape are due to the original form of the pebble as it was recovered perhaps from a beach, or if the basic shape has been completely altered by human activity. Modifications apart from rounding of edges include provision of a hollow in the center of the upper and lower surfaces. The hollow in the upper surface is 30 mm long, 25 mm wide and 3 mm deep, while that in the lower surface is the same depth but slightly longer and wider. The axes of the hollows correspond to those of the stone itself. At points approximately equidistant from the center of each side are two shallow grooves, running from top to bottom of the stone, suggesting finger- or lashing-grips. Though generally similar in appearance, inspection shows that one opposing pair of grooves is oriented to the left and the other pair to the right. In other words, whereas one groove is deeper at

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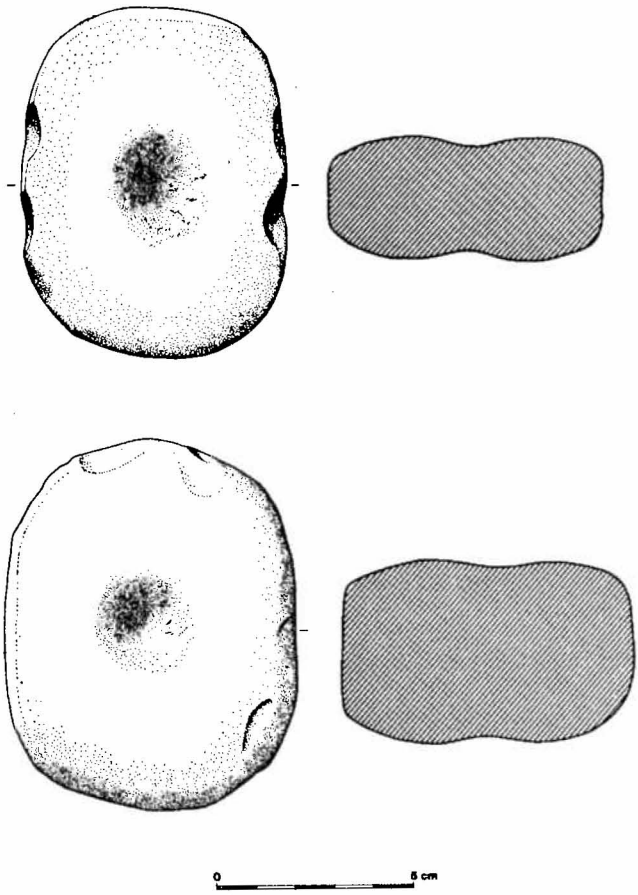

Fig. 1 Stone artifacts from Tonga *(top)* and Fiji *(bottom)*.

the top, its counterpart opposite is deeper at the bottom, the situation being reversed for the other pair.

All work on the stone appears to have been achieved by pecking, though in the case of the lateral grooves there are indications that this may have been preceded by chipping. On both upper and lower surfaces, the space between the pecked area around the perimeter and the central depression is comparatively smooth, but it is difficult to say if this has been achieved deliberately or is a remnant of the original condition of the entire surface.

The Fijian Specimen (Fig. 1, *bottom*)

This specimen was obtained during the course of archaeological investigation on behalf of the Fiji Museum, financed by the National Science Foundation of the United States and sponsored by the Bernice P. Bishop Museum of Hawaii. The project included the excavation of a rock-shelter on Yanuca, a small offshore island approximately seven miles west of Sigatoka, on the main Fijian island of Viti Levu. The artifact is of diorite, and was found at a depth of 27 inches from ground surface,

in association with large numbers of potsherds and molluscan shells. A charcoal sample recovered at 30 inches has been analyzed by Gakushuin Laboratories, Japan, and provided a radiocarbon date of 2060 ± 100 B.P. (years before 1950) (GaK-1228).

In size and shape the specimen is very similar to the Tongan example, the principal difference being the greater thickness of the Fijian artifact. Dimensions are as follows: length 96 mm, width 74 mm, thickness 47 mm. Central depressions on both upper and lower surfaces are similar to those on the Tongan specimen, but are slightly less pronounced, their depth being only 1.5 mm. The surfaces of both hollows are fairly smooth, and though deliberately made, are not obviously the result of pecking or using the artifact as a hammer. There are no lateral grooves.

Shaping of the stone has been accomplished, at least in the final stages, by grinding, this being particularly evident at one side and one end, where a definite flattening has been achieved. Surface irregularities at the other end might be due either to the original condition of the specimen or to later use as a hammerstone. The coarse nature of the material precludes the possibility of distinguishing any surface areas that might have been either left in their original condition or given treatment such as polishing.

CONCLUSIONS

No associated evidence was found to suggest the function of either artifact described above. No surface finds of similar objects were made, nor was anything similar noted in current use in either island from which the artifacts under discussion originated. Finds elsewhere, however, show that the implement has a wide geographical and chronological distribution. For instance, it has been found with the skeletal remains of an extinct group of humans on a site in Ceylon (Deraniyagala 1963:189–192 and Plate 3*a*); in inland Australia, where it is known as a *kulki* stone (McCarthy 1946:58–59, Figs. 304–305); and in coastal New Guinea, where reports state the use in recent times of two such stones for cracking hard nuts, one as a hammer and one as an anvil, the pits being produced by prolonged use this way (Golson 1968, personal communication).

The authors of the article describing the specimen found in Sumatra suggest that it was "probably used as a hammer, as an anvil for crushing nuts, and as a crushing and grinding stone." The general similarity of size and form seem to be the only factors indicating that all or any of these functions may have been fulfilled by the Tongan and Fijian examples.

It seems possible that the second of the three suggested uses at least may be applicable to them, because in both the Tongan and the Fijian island groups the manufacture of coconut oil for personal use is carried on. This, in the case of Fiji, involves using the kernel of the nut from the *makita* tree *(Parinari laurina)* as a source of perfume (Parham 1964:61), so that an implement for cracking the nuts might well have been used. The hardness of the shell would probably justify provision of a hollow in the anvil stone, and even in that employed in striking, to hold the nut in position while being struck.

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[This kind of stone artifact is commonly found in Hoabinhian sites in Mainland Southeast Asia; for example, see U Aung Thaw's "The 'Neolithic' Culture of the Padah-lin Caves," Plate IV*f–g*, *AP* XIV, 1971. Ed.]